



## **DISTRIBUTED GENERATION EQUIPMENT APPLICATION FORM – FY15-16 Pilot**

**THIS APPLICATION IS IN ADDITION TO, NOT A REPLACEMENT OF, ANY OTHER PERMITTING, LICENSING OR OTHER APPLICABLE BUILDING REQUIREMENTS OF THE CITY OF MESA**

Check all that apply

☐ Purchase   ☐ Expansion   ☐ New home construction   ☐ Non-Incentive   ☐ Rental\*\*

### **SECTION I: CUSTOMER**

Name on City of Mesa Utility Account \_\_\_\_\_ Daytime Phone \_\_\_\_\_

City of Mesa Account Number \_\_\_\_\_

Spouse Name \_\_\_\_\_ Evening Phone \_\_\_\_\_

Alternate Contact \_\_\_\_\_ Phone \_\_\_\_\_

Generating Facility Address (address on utility bill) \_\_\_\_\_

Gate Code (if applicable) \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Customer E-mail Address \_\_\_\_\_

\*\*If Rental, please list the property owner's name \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Estimated/Historic Annual Energy Use: \_\_\_\_\_ kWh

Estimated/Historic Peak Electrical Demand: \_\_\_\_\_ kW

Connected Building Load (if applicable): \_\_\_\_\_ kW

### **SECTION II: INSTALLER**

Name (as listed with the AZROC) \_\_\_\_\_

DBA (as listed with the AZROC) \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Application Contact \_\_\_\_\_ Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Design Contact (City will email to this contact) \_\_\_\_\_ Phone \_\_\_\_\_

E-mail \_\_\_\_\_

ROC License Number: (C05, C-11, K05, K-11) \_\_\_\_\_

### SECTION III: EQUIPMENT DEALER ( ☐ Same as Installer)

Name (as listed with the AZROC) \_\_\_\_\_

DBA (as listed with the AZROC) \_\_\_\_\_

Contact \_\_\_\_\_ Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

ROC License Number: (B, KB-1, KB-2 KO, C05, C-11, K05, K-11) \_\_\_\_\_

### SECTION IV: SOLAR ELECTRIC SYSTEM INFORMATION

1. Estimated installation date: \_\_\_\_\_

2. Is access to the utility AC disconnect switch, service entrance, electric metering, and/or any required output metering by Mesa personnel in any way restricted or impeded (fences, locks, gates, walls, animals, etc.):

☐ Yes ☐ No If yes, explain \_\_\_\_\_

#### 3. Equipment and Array Information:

<u>Equipment Information</u>		
A) Module Manufacturer & Model:		
B) Max DC Power Rating (Watts DC):		
C) Inverter Manufacturer & Model:		
D) Inverter Nameplate Output rating (kW-AC):		
E) Inverter AC Output Voltage (V):		
<u>Array Information</u>		
F) Modules per String:		
G) Strings in Parallel:		
H) Number of Inverters:		
<u>Subarray 1</u>	<u>Subarray 2</u>	<u>Subarray 3</u>
Subarray Tilt:	Subarray Tilt:	Subarray Tilt:
Subarray Azimuth:	Subarray Azimuth:	Subarray Azimuth:
Number of Strings:	Number of Strings:	Number of Strings:

**Total Connected DC Module Capacity (B \* F \* G):** \_\_\_\_\_ Watts DC

**Total Inverter Nameplate Capacity (D \* H):** \_\_\_\_\_ kW-AC

#### 4. Battery Information:

Manufacturer \_\_\_\_\_ Manufacturer \_\_\_\_\_

Model \_\_\_\_\_ Qty. \_\_\_\_\_ Model \_\_\_\_\_ Qty. \_\_\_\_\_

**PROTECTION EQUIPMENT - PROVIDE INFORMATION FOR ALL APPLICABLE ITEMS (ATTACH SEPARATE SHEETS AS NECESSARY)**

1. Manufacturer's name for each protective device.
2. Manufacturer's model number for each protective device.
3. Range of available settings for each protective device.
4. Proposed settings (trip setpoint and time) for each protective device.
5. Ratios of associated current transformer. If multi-ratio, state the available ratios and which ratio will be used.
6. Describe operation for tripping of the interface or generator circuit breaker for both:
  - A. City of Mesa outage; and
  - B. City of Mesa short circuit (three phase and single phase to ground)

**SUPPLEMENTAL INFORMATION**

The information below is to be submitted for all projects. Provide three sets of all drawings and diagrams, including any revisions or changes that occur during the application review/approval process. Diagrams must include project name and address, show generator size, and all protective relaying and control equipment, as well as electric service entrance and City of Mesa meter.

1. Electrical One-Line Diagram
2. Electrical Three-Line Diagram - Include all neutral and ground conductors and connections.
3. Control Schematics and Connection diagrams:

Diagrams must include the detailed wiring of all protective relays and control functions, and include control power source and wiring.
4. Site Plan and Maps:

Include the arrangement of the major equipment, including the electric service entrance section and the City of Mesa meter, location of generator and interface equipment, and location of the disconnect switch. Include street address and location of any lock-boxes, etc.
5. System Quotation:

A quote from the listed dealer or installer that includes:

  - Customer name
  - Installation address
  - Module manufacturer, model number and quantity
  - Inverter manufacturer, model number and quantity; and
  - Cost
6. Lease Agreement Documentation

Include a copy of the lease agreement (where applicable) signed by the utility customer on the account

7. Other Requirements:

- a. New systems shall only use PV modules and inverters approved under California SB1 guidelines (which can be found online at <http://www.gosolarcalifornia.org/equipment/>)
- b. Customer shall be solely responsible for obtaining any permits, inspections and approvals required by applicable jurisdictions with respect to the Distributed Generation Facility as well as use of a licensed, bonded and insured contractor to design and install the Distributed Generation Facility. Eligible license classifications for dealers include: B-, C-05 (Solar), C-11, KB-1, KB-2, KO- (Solar), K-05 (Solar), K-11, or other license accepted by City.
- c. Customer shall install only Underwriters Laboratories Inc. certified equipment and devices as part of the Distributed Generation Facility, unless otherwise approved in writing by City. Customer shall submit manufacturer's specifications showing that the inverter is UL 1741 compliant.
- d. Customer shall be responsible for designing and installing the Distributed Generation Facility and all related equipment on Customer's side of the Interconnection Point(s).
- e. **NOTE: IN ORDER TO QUALIFY FOR THE INCENTIVE, PRIOR TO INTERCONNECTION CUSTOMER (1) MAY ALSO BE REQUIRED TO PROVIDE A CERTIFICATE FROM THE DISTRIBUTED GENERATION FACILITY MODULE MANUFACTURER THAT THE MODULES INSTALLED MEET THE STATED OUTPUT SPECIFICATIONS AT THE TIME OF MANUFACTURE, AND (2) A COPY OF THE WARRANTY OF DISTRIBUTED GENERATION EQUIPMENT.**

**APPLICATIONS SHALL BE SUBMITTED TO, AND ALL QUESTIONS REGARDING THE APPLICATION SHALL BE SUBMITTED TO:**

Lori Bonilla  
Energy Resources Business Development Coordinator  
PO Box 1466  
Mail Stop 5030  
Mesa, AZ 85211-1466  
(480) 644-2652  
[lori.bonilla@mesaaz.gov](mailto:lori.bonilla@mesaaz.gov)

BY ITS SIGNATURE BELOW, CUSTOMER'S SOLAR INSTALLER ACKNOWLEDGES THAT (1) IT HAS READ AND UNDERSTANDS THE TERMS OF EXHIBIT A TO THIS APPLICATION: TECHNICAL INTERCONNECTION REQUIREMENTS; AND (2) THOSE TECHNICAL INTERCONNECTION REQUIREMENTS WILL BE INCLUDED IN CUSTOMER'S INTERCONNECTION AGREEMENT.

**ACKNOWLEDGED BY INSTALLER:**

\_\_\_\_\_  
BY

\_\_\_\_\_  
DATE



APPLICATION EXHIBIT A

**TECHNICAL INTERCONNECTION REQUIREMENTS  
AS INCLUDED IN CUSTOMERS INTERCONNECTION AGREEMENT**

City or Customer may from time to time require changes in Customer's connection, protective, or control equipment to meet changing conditions and requirements for the Distributed Generation Equipment or System.

1.0 GENERAL OBLIGATIONS:

- 1.1 Customer shall ensure, at its sole expense, that the electrical characteristics of its load and generation equipment shall conform to City's normal power quality requirements. Any deviation from sine wave form or unusual interval fluctuations in power demand or production shall not result in impairment of electrical service to others. Power factor shall be within the acceptable limits defined by ERD Electric Utility's Electric Distribution Specifications and its Rules and Regulations.
- 1.2 Customer shall, at its own expense, design, own, operate and maintain the Distributed Generation Equipment in good repair in accordance with manufacturer's guidelines and prudent electrical practices including, but not limited to NFPA 70 and Section 690 of the National Electrical Code, and provide written evidence to City of such compliance upon request of City.
- 1.3 Customer shall install only Underwriters Laboratories Inc. (UL) certified equipment and devices as part of the Distributed Generation Facility, unless otherwise approved in writing by City. Inverter shall be certified as UL 1741 compliant. Customer shall provide evidence of UL 1741 compliance by submitting manufacturer's written specifications to City. New systems shall only use PV modules and inverters approved under California SB1 guidelines (which can be found online at <http://www.gosolarcalifornia.org/equipment/>)
- 1.4 The Distributed Generation Equipment at the Site must be off-line before the City electric service is restored (reclosed) following a trip of the City's feeder breaker or other protective device. See the Agreement to which this Exhibit is attached for requirement of written assurance.
- 1.5 Relaying and protection requirements stated herein shall take into consideration whether Customer has more than one Distributed Generation Equipment, and whether such Distributed Generation Equipment can be switched by Customer among multiple Interconnection Points.
- 1.6 During ERD Electric Utility Hot Line Tag (situations when Reclosing of a feeder breaker is disabled for the additional safety of line personnel working on or near energized lines and/or equipment) conditions, the Customer's loads may not be able to be served by another 12kV feeder. ERD Electric Utility reserves the right to isolate the Distributed Generation Equipment via the disconnect device (Section 2) and the customer will operate solely from energy provided by ERD Electric Utility.

## 2.0 LOCKABLE LOAD-BREAK DISCONNECT SWITCH:

Customer shall install a lockable load-break disconnect switch with a visible break for use by the City as a means of electrically isolating the System from the Distributed Generation Equipment and to establish working clearance for maintenance and repair work in accordance with the City's and ERD Electric Utility's safety rules and practices, subject to the following requirements:

- 2.1 The disconnect switch must be **CLEARLY IDENTIFIED AND MARKED BY CUSTOMER AND EASILY ACCESSIBLE** at all times to the City's personnel.
- 2.2 The disconnect switch **MUST BE LOCKABLE ONLY IN THE OPEN POSITION** with a standard City or ERD Electric Utility padlock. Only City personnel shall remove this padlock. **UNAUTHORIZED REMOVAL SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.**
- 2.3 Customer is responsible for all labor and material costs to install, maintain, repair, or replace the disconnect switch.
- 2.4 The disconnect switch and its location must be approved by ERD Electric Utility prior to installation.
- 2.5 The disconnect switch may be opened at any time by the City without notice.
- 2.6 The disconnect switch shall be labeled by the customer as follows:
  - DISTRIBUTED GENERATION DISCONNECT SWITCH WARNING!
  - ELECTRICAL SHOCK HAZARD
  - DO NOT TOUCH TERMINALS
  - TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

3.0 **SYSTEM SIZE:** The installed DC nameplate capacity of the Distributed Generation Equipment shall not be greater than such kilowatt (kW) peak as shall be determined by ERD Electric Utility on a case by case basis.

4.0. **METERING OF DISTRIBUTED GENERATION EQUIPMENT:** Customer shall install a meter socket and wiring to allow measurement of energy production from the Distributed Generation Equipment. The meter socket and its installation shall be in accordance with ERD Electric Utility specifications.

- 4.1 The meter socket shall be wired such that the meter runs forward while measuring generation from the Distributed Generation Equipment.
- 4.2 There shall be no load connected between the dedicated meter and the panel breaker connected to the Distributed Generation Equipment. The breaker in the customer's main distribution panelboard connected to the Distributed Generation Equipment shall have no other load, and shall be a dedicated circuit.
- 4.3 The meter socket shall be located next to the Customer's existing ERD Electric Utility meter.
- 4.4 ERD Electric Utility shall provide and install a meter to measure energy production from the Distributed Generation Equipment. For Distributed Generation Facilities with battery back-up, ERD Electric Utility **will not** supply or install a meter to measure energy production.

5.0 **ACCEPTANCE TESTING AND INSPECTION:** Prior to commencing parallel operation of the Distributed Generation Equipment with the System, the Distributed Generation Equipment will be subject to acceptance testing and inspection whereby the ERD Electric Utility may, in its sole discretion, verify the safe and proper operation and interconnection of the Distributed Generation Equipment including but not limited to the following,:

- 5.1 All equipment comprising the Distributed Generation Equipment must be the same, approved equipment listed by the Customer in the Application.
- 5.2 All equipment comprising the Distributed Generation Equipment and the remainder of the Customer's electrical service falls within the guidelines and technical specifications listed in this Agreement.
- 5.3 The energy produced is both within the acceptable limits for voltage and power quality and that the energy produced over a billing cycle is within the normal tolerances for the expected energy output of the Distributed Generation Equipment.
- 5.4 The Distributed Generation Equipment stops the flow of energy from the Distributed Generation Equipment to the System when an electrical outage is simulated.

**Failure of any acceptance testing and inspection may result in ERD Electric Utility's refusal to allow the interconnection of the Distributed Generation Equipment.**